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LXXVI.

REPORT ON THE MEDICAL AND DENTAL
SCHOOLS.

TO THE BOARD OF OVERSEERS OF HARVARD COLLEGE:—

Your Committee have the honor to report that the inadequacy of the present building for the needs of the Medical School is so serious a matter that some action has become necessary. This fact was recognized several years ago, and a number of meetings were held of a Committee, consisting of some members of the Faculty of the School and some members of the Visiting Committee, at which the subject was fully discussed and immediate action decided on. This decision was, however, modified at a subsequent meeting in view of the fact that no alterations or additions were practicable in connection with the present building which could be more than a temporary makeshift, and which would not be outgrown in a few years. Nevertheless these alterations would be very expensive, and it was held that if the community were to be appealed to for money at all, it would be unwise to ask them to contribute a considerable sum for a temporary modification of the old building, when it was evident that, in a few years at most, it would be necessary to appeal to them again for aid in the construction of a new one.

Action was therefore deferred, and as your Committee believe, wisely deferred, in order to await events and to see whether the increase of value of the land on which the building stands, an increase necessarily largely dependent on the character of the buildings erected in the neighborhood, would be such as to justify its sale. Since that time no marked change has occurred, and in the meantime the need for more room inside the building has increased very much year by year. The need for enlargement was urgent then: it is now imperative.

An increase in room sufficient to relieve immediate need could be obtained at the minimum of expense by the erection, on the vacant ground on each side of the Sear's Laboratory, of a one story building of corrugated iron, or such other inexpensive construction as would afford adequate protection against the weather without increasing the danger of fire. Such a building could be lighted by sky-

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lights, if desirable, and would not be high enough to interfere with the light of any of the adjoining rooms of the School.

Your Committee recommend that such buildings be erected at once.

Another point to which your Committee desire to call attention is the arrangement of courses in the Medical School and the employment of the students' time.

This question is one of the great problems of modern education and is not confined to medical teaching. The enormous growth of science during the last two or three decades has made many of the single branches so vast that a life-time might be spent in learning each one of them; while the development of specialties in medical practice, and the necessity of having each thoroughly taught for the benefit of such students as intend to follow it, has tended to throw out of perspective, more or less, the various parts and elements of which the general education, common to all practitioners, must of necessity be made up. It is nearly twenty-five years since Professor Huxley said that the great problem of the day in education was not what to teach students, but what not to teach them, and this problem is comparably more serious now than it was then.

No conscientious instructor who is thoroughly acquainted with his subject can see, without grave regret and even something like self-reproach, the student leave his course possessed with only a fraction of the knowledge which he himself has and which he would be only too glad to impart if time permitted; and in every large school the actual division of the studies is practically largely determined, in the last resort, by a compromise between the apparent claims on the students' time of the various departments, which, again, may be dependent in part on the urgency with which these claims are presented. It is impossible that it should be otherwise. The student is, therefore, during his brief years of medical study, placed in a trying position. There undoubtedly results a certain definite survival of the fittest; but — and this is the point — *it is the survival of the fittest to survive under the given conditions and not necessarily of the fittest for the use of others.*

Your Committee feel that any steps that might be found possible toward the diminution of the amounts of *required* studies in the School, while leaving the fullest opportunities accessible to special courses, would be in a measure of benefit to, and be hailed as a relief by both teachers and pupils. And, further, they believe that it would be to the advantage of both teachers and pupils if some of the required courses could be more nearly approximated to the minimum of essential knowledge.

It has been said that applied therapeutics should be taught in the Clinical Courses in the Hospitals and Dispensaries. This is true; but it is not enough. Notwithstanding the excellent lectures on Clinical Therapeutics now given in the departments of Clinical Medicine and Theory and Practice, the School would still, in our opinion, be strengthened by the establishment of a separate chair in Therapeutics, additional to all the valuable and indeed indispensable instruction detailed further on. A mature, judicious general practitioner would be the proper person to fill such a chair.

Your Committee hope that the Board of Overseers will favor the passage of an amended Anatomy Act soon to be presented in the Legislature. It is a vital question for Science.

CLINICAL MEDICINE.

There has been no change this year in the amount or method of instruction in the Department of Clinical Medicine. The course in Infectious Diseases given in the South Department of the City Hospital for the first time last year has been and will be continued. The Fourth Class, in divisions of eight or ten men, thus have, in the second half-year, the precious opportunity to become practically familiar with scarlet fever, measles and diphtheria instead of going out into practice with only a book knowledge of these common and important diseases. Such an opportunity can be afforded by but few medical schools in this country.

Plans are under consideration to still further increase the clinical facilities for the Fourth Class, and it is hoped that efficient means to this end may be secured before long. The main difficulty is the fact that the School does not control the appointments and terms of service in any hospital. The position, even of a welcome guest, is not just the same as is that of a proprietor. There are good grounds for the belief that the clinical advantages in the Harvard Medical School are second to none in this country, but there is still room for improvement. The personal work of both professors in the Department has been interrupted in the current year by illness, but all the assistants have stepped into the breach with cheerful and efficient service, and there is no reason to believe that the students have suffered.

THEORY AND PRACTICE OF MEDICINE.

The principal change in this department has been the addition of a lecture by the Professor in charge of the Fourth-Year students, an addition made at the request of the students themselves. The work of the department seems to be very satisfactorily conducted.

Dr. D. W. Cheever reports:—

I have attended lectures, and held personal interviews with the heads of each department assigned to me to visit in the Medical School.

My general impression is of intense activity and of great progress in teaching in Anatomy, Surgery, Clinical Surgery and Pathology, and of a much more thorough instruction in *Materia Medica* than I had supposed. Whether or not a due perspective is observed as to the teaching and importance of the subjects can only be determined by comparing this with the reports on the other departments of the School.

Anatomy is taught in the whole of the first year; the whole of the second year; and a part (elective) of the fourth year. One hundred and seventy-six (176) lectures, and thirty-six (36) recitations are given.

The dissecting room is supervised by six qualified Assistants, each of whom has charge of eighteen students. The latter are examined and quizzed on their work three times a week; and the Assistants spend two to four hours a day in the dissecting room, in turn. The student dissects at least two parts the first year, and one the second year. An accurate record is kept of every student's dissection, and he may be conditioned in it. He has demonstrations on the subject by the Demonstrator, and also instruction in sections, by the Assistants, daily, in October, November, December, April and May. Once a week the Instructor in Anatomy holds a formal recitation on the lectures through the first year. Three and one-half weeks are consumed in dissecting each part, and discipline and care are strictly enforced. There can be no waste.

In the second year, eight students who have reached grade *A* in the Anatomy examination, are given much larger privileges in dissecting for the lectures, under the name of Prosectors.

In the fourth year there are two elective courses in Anatomy, covering three months; and in these the student dissects three parts.

Thus, those who wish, can refresh all their anatomical knowledge before graduating. There is then no lack of abundant instruction on the cadaver, but there is never a surplus of material. The supply of anatomical material has not kept pace with the growth of the School, and certainly not with the greater demands of a more thorough instruction.

Comparing the period when I was Demonstrator, 1860 to 1868, with the present, we find in 1896 that anatomical material had

increased seventy-five per cent., and in 1897, only *fifty* per cent. Meanwhile the classes have increased from 200 to 250 students then, to over 500 now.

In addition to this the valuable courses on operative surgery consume much anatomical material. A full course of eight exercises is given before the whole of the third and fourth classes in Surgical Operations, on the dead body, and an elective course for the fourth year of fifteen exercises, where each student has one half of a cadaver for operations. These privileges attract many students from other schools; but this year, dearth of material has obliged four students to share each cadaver.

A still more serious demand for material is made for the Dental School. Hitherto, dental students have been required to dissect one part; now they are obliged to dissect two parts. It will be impossible to carry this out unless the supply can be increased, and here, in my judgment, the pruning knife should be applied and economy practised. The other alternative is the hope of securing such changes in the Anatomy Law before the Legislature as will make the furnishing of dead bodies to medical schools, and to *them only, mandatory*, where it is now permissive. This should apply only to those dying and being buried at public expense and not claimed by friends. Extreme care is taken to respect all private feelings now in our Medical School, and a decent burial of all remains is strictly enforced.

The lectures in Anatomy are illustrated by most complete and admirable models, plates and preparations, the theme is succinctly and carefully handled, and the teaching clear and concise. We observed, with regret, at the lecture at 9 A.M., that although the entire class, or about 160 students, attended, there were very many late in entering. These late comers entered until 9.35; the lecture ended at 9.55; thus, there was only twenty minutes of absolute quiet.

SURGERY.

The course covers three years. Beginning the second-year class, this year is devoted to the scientific part of surgery, to practical details and to laboratory work, and recitations. Surgical Pathology is the chief feature.

There are recitations in Surgical Pathology by Dr. C. A. Porter at the Massachusetts General Hospital. There is a laboratory course on Surgical Pathology by Dr. E. H. Nichols, and there are clinical demonstrations of this course at the City Hospital by Drs. H. L. Burrell or J. C. Munro; there is a course on apparatus and

bandaging (to sections) by Drs. Munro and Porter. An endowment of \$5,000 has been made for Dr. Nichols' laboratory course on Surgical Pathology.

Third Year. The very important field of Surgical Pathology having been thus provided for, the student enters on a systematic course of lectures by Dr. J. C. Warren, fifty-one (51) in number; fourteen recitations keep pace with the lectures, in proportion of one to three. There is also a clinical lecture each week, and at each hospital, illustrating the didactic lectures.

Of the fifty-one lectures twelve are on fractures and dislocations, but the newer fields of surgery receive large attention, as evidenced by ten lectures on the abdomen (including hernia) and five on the head and spine.

Every student is required to see, observe, follow up and report on a case of fracture. Half the class go to the Massachusetts and half to the City Hospital. Drs. Scudder and Monks supervise this very important branch. There are visits in each hospital, in three or four sections, once each week.

In the fourth year, there are lectures, systematic and clinical, on genito-urinary surgery, throughout the year by Dr. F. S. Watson; and a course on ovarian tumors by Dr. Homans.

CLINICAL SURGERY.

A Clinical Surgical Conference is held by Dr. C. B. Porter once a week at the Massachusetts General Hospital; cases are written up and reported by third-year students, and criticized. This is a very popular course, and the papers have much improved in character.

Minor Surgery is taught to sections of ten students, at each hospital, in courses of two weeks, in the out-patient department. This is eminently a course of personal instruction. This lasts from October to May. Clinical visits are made in the wards of each hospital in sections of twenty, weekly.

In the fourth year, in both the Massachusetts General and City Hospitals, clinical lectures in the amphitheatres are given to one half the class, weekly. Clinical diagnosis is taught to sections of one fourth the class, weekly, in each hospital. This course lasts from October to May. The subjects treated are: Diagnosis, Sterilization, Medico-legal examinations, Surgical Therapeutics, and Feeding.

Major surgical operations are done, especially on public operating days, in each hospital, once a week.

A course in Emergencies and Accidents is given to small sections, at the Massachusetts General Hospital every evening, for the fourth year. On the completion of the new surgical buildings this course will also be given in the City Hospital. There remains also for the fourth year the course on operative surgery, twice a week, for two months, by Dr. Porter, and finally, fifteen exercises where the fourth year students operate themselves on the cadaver, from two to four students on each body.

A more complete course than that combined in Surgery and Clinical Surgery, could hardly be devised. It covers the second, third and fourth years in the Medical School. First, Surgical Pathology, both by text-books and by laboratory work; second, Bandaging and Apparatus; third, Minor Surgery, in small sections; fourth, systematic lectures and recitations in Surgery; fifth, a case of fracture; sixth, Clinical illustrations and lectures; seventh, Genito-urinary Surgery and Ovarian and Abdominal Surgery; eighth, the Clinical Conference; ninth, Clinical Visits; tenth, a course of drills in diagnosis; eleventh, a course (practical) in emergencies and accidents; twelfth, Operative Surgery taught by the Professor, and finally performed by each student.

PATHOLOGY.

The new and well equipped laboratories for pathology in both hospitals offer great facilities, and have awakened much enthusiasm in this important branch.

Pathology is a second year course, but some advanced instruction in autopsies and in pathological histology is given in other years. Two lectures in general pathology and pathological anatomy and one recitation are given throughout the year. A course (practical and laboratory combined) is given twice a week by Professors Councilman and Mallory, Doctors Wright, Nichols, and numerous assistants, through the year. The class is divided into six sections, or groups, around long tables, and morbid specimens are shown, described to, and handled and examined by each group. The instructors go over the specimens six times in one hour. This recalls Virchow's celebrated course in Berlin. Twice a week there is, in sections, a drill in pathological histology, with specimens, description for fifteen minutes, each student making drawings of specimens for forty-five minutes.

Autopsies are held in both hospitals, and the student is expected to attend *twenty*. Advanced students are also allowed to make

the autopsies. Professor Councilman thinks *ten* autopsies at least should be required, for graduation.

There is a summer course to advanced students, or graduates, by Professor Mallory, which could be indefinitely expanded, and which this year has attracted eleven applicants from the Johns Hopkins School.

Professor Councilman sums up the needs and future of his department, as follows:—

1. A Clinical Laboratory for Pathology in the Medical School building.
2. A hospital attached to the School, where the student could follow the case in the Clinic, and even follow the fatal case in all the details of an autopsy, thus connecting clinical and pathological instruction; and also, where in surgical cases he might be able to see the tumor before operation and after operation in the pathological laboratory.
3. The development of private and post-graduate courses, and of publications.

In this connection it may be noted that Baltimore, Philadelphia and New York already have hospitals attached to and controlled by their Medical Schools. It is also a gratifying fact that in Boston, Dr. Sears has continued his benefactions to the Sears' Laboratory by a gift of \$500 a year for the library and for publications, and that this year he has generously donated one thousand dollars.

We must not lose sight of the fact that the Contagious Department of the City Hospital has added to the Pathological department of our School unrivalled facilities for the study of the bacillus of the anti-toxine of diphtheria.

MATERIA MEDICA AND THERAPEUTICS.

Lectures and recitations are held twice a week, the whole of the second year. Laboratory work, six exercises (pharmacy) two hours each, in sections—Dr. Harrington and Mr. Jordan; eight demonstrations in experimental therapeutics by Dr. Pfaff.

The first half-year, lectures on drugs. The second half-year, recitations, drills, prescription writing, in public; inspection and handling of drugs and preparations.

No subject can be more barren in awakening enthusiasm than *Materia Medica*. We must bear this in mind in any criticism on the course.

In the systematic lectures, the following order is observed: *Drugs* — (1) officinal preparations and doses; (2) physiological action; (3) therapeutic uses.

On these lectures there are sixteen recitations. The *important* synthetical medicines are described, but not others. Prescription writing, in Latin, is practised on the blackboard by four students at a time, during many hour exercises. Incompatibles, inert compounds and poisons are especially illustrated and drilled on. In the laboratory exercises the students, in sections, make tinctures, powders, mixtures, pills, personally for two hours each lesson, under the direction of Professor Harrington and Mr. Jordan, from the College of Pharmacy. This is an extremely valuable and popular course. I would advise its being enlarged at the expense of the lectures.

The course on experimental therapeutics is of an advanced character, and includes original observations by Dr. Pfaff.

Professor Harrington's well known ability as a public expert in adulterations of food and his valuable courses on hygiene, render him especially reliable in teaching.

THE DEPARTMENT OF THERAPEUTICS AND HYGIENE.

Dr. Morrill Wyman reports: —

The Therapeutic Laboratory has accommodations for eighteen students: they come in divisions. A number of officinal drugs and chemicals sufficient for the purposes of practical pharmacy are properly arranged. Prescriptions are written in accordance with the United States Pharmacopæia; the medicines are weighed, compounded and carefully put up with all the directions as to dose time, vehicle, date and signature.

The most approved methods of dispensing medicines are also taught — as flat compressed pills, in capsules or wafers, but in a much more acceptable form than we used to see them and flavored to taste. They make the taking of drugs under some conditions almost a fine art. The laboratory is largely attended and the teaching much valued, as is all real instruction.

No one preparing for the medical profession can over-estimate the value of physical training. Anatomy, the study of the machine; physiology, the machine in motion, are the work of the laboratories. The art of observation, the medical education of the senses, as it has been called, is more valuable as a mental training than all didactic lectures. It is the best training for the practice of medicine as an art, as a science, and for research. Laennec made and carefully recorded

nearly 400 autopsies before the sounds heard on the chest by his medically educated ear, were connected with the morbid changes within. Auscultation could have been invented in no other way.

Physical training is essential, from the physical examination of the chest at the clinical conference to the composition and dispensing of the appropriate remedy in the Pharmacy. Dr. Harrington's publications exposing some of the impudent frauds practised upon the public by the vendors of "Extracts of Malt," "Commercial Lithia Waters" and "Food Nostrums" deserve the thanks of all who have any regard for the public health. The papers are short, spirited and to the point. It is hardly to be hoped that they will prevent quackery, but they give people fair warning of the imposition, if nothing worse, to which they are exposed. Some physicians, thoughtlessly it is to be hoped, by their recommendation or qualified approval have aided this kind of imposition.

His experiments with formaldehyde as a surface disinfectant, undertaken under very considerable difficulties, deserve much credit. They must have been carried on *inter taedia et labores* of a revolting character with patience and circumspection. His conclusions seem to have been carefully drawn and its value, except as a surface disinfectant, considerably modified from what was at first assumed for it.

OBSTETRIC DEPARTMENT.

The hospital at No. 24 McLean Street — The Boston Lying-in-Hospital — is the most interesting department in the teaching of obstetrics. It is here that a large part of the clinical instruction is given.

The hospital building is interesting in another point of view. Here is a hospital evolved from a block of city habitations with few indications towards the object to which it was to be devoted. It is an object lesson our students would do well to study. Here were rooms not very prepossessing, which by slight but well devised changes became, one the Delivery room, another the Recovery room, and a third, a Convalescent room, each with simple appropriate, easily cared for furniture, neat and clean; add to these a sterilizing room and we have the most essential parts of a hospital. The Delivery room may be the model, to be approached as near as may be by the Externe, during his assigned term of service, and a kettle of boiling water his sterilizer, even among the poorest of his patients.

At this hospital our students receive instruction either as house physician or Externes. Of the six house physicians three are constantly in attendance and are required to reside in the hospital,

where they are furnished with breakfast, other meals being provided outside the hospital; they are appointed for six months.

Our students are required to take charge of at least six cases of labor, to receive clinical instruction on at least one of them, to care for their patients during the convalescence and to make full written reports of the cases.

Externes appointed by authority delegated by the Trustees of the hospital are under the immediate charge of the out-patient House Physician. Students who are assigned to take charge of out-patients during their confinement are expected to devote their whole time to the hospital work during their term of service. They are not allowed to perform obstetrical operations. They are provided with printed blanks to be carefully filled out, with which they can communicate by telephone or otherwise with the Senior House Physician, who is always on duty at the hospital and will answer the call at once night or day. Externes must visit their patients twice daily for the first three days, and at least daily for the three following days, and return to the hospital a chart of the temperature and pulse at each visit.

The administration of the hospital seems to be carried on with great exactness of detail. The pulse and temperature, the two most important elements in forming a correct judgment of the condition of an obstetrical patient, are recorded twice daily from the time of her confinement until she leaves the hospital. These records are kept and bound in volumes in a manner most readily accessible; each has a copious index of principal symptoms. Those students who follow out the course laid down for this hospital with proper care cannot but form habits of discipline in the exact observation and recording of results that may go with them through their professional lives.

One hundred and thirty-two house officers have completed their terms of service in the hospital and received the Corporation's diploma; clinical instruction has been given to more than 150 students annually in the houses of the poor to the advantage of both practitioner and patient. Since 1881 the students of our school have treated 11,142 cases as out-patients during their confinement, with but nineteen deaths — less than 1 in 500. Those who remember the rate of mortality previous to 1881, before the antiseptic treatment was adopted, can read this statement with heartfelt gratitude.

GEORGE B. SHATTUCK,
For the Committee.

APRIL 4, 1898.

THE DENTAL SCHOOL.

Your Committee find that the Dental School is in a prosperous condition, and that much good work is being done there. The requirements of the entrance examination are greater and the fees are higher, and yet the total number of students was greater during the past year by 29 than ever before. The building now occupied by the School on North Grove Street has been renovated and in some particulars made more convenient. There have been very few changes in the staff of instructors.

GEORGE B. SHATTUCK,
For the Committee.

APRIL 4, 1898.